

REMARKS

Applicants respectfully request that the foregoing amendments be made prior to examination of the present application.

In the specification, a claim for priority has been added as the first paragraph of the specification, and an Abstract has been added.

Claims 1 - 26 are requested to be cancelled and new claims 27-60 have been added. New claims 27-60 correspond to the subject matter of original claims 1-26, except that improper multiple dependencies have been eliminated.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

Should there be any questions regarding this submission, the Examiner is invited to contact the undersigned at the telephone number set forth below.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

Respectfully submitted,

Date

May 2, 2007

By

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ABSTRACT

The present invention relates to novel types of cellular calcium probes that are based on Troponin C and two chromophors suitable for FRET (fluorescence resonance energy transfer). The Troponin C-based calcium sensors of the invention function in diverse subcellular environments, for example even when tethered to a cellular membrane. The invention further provides nucleic acid constructs encoding the calcium probes of the invention, expression constructs, host cells and transgenic animals. Furthermore, methods for the detection of changes of local calcium concentrations and for detecting the binding of a small molecule to fragments of Troponin C are provided.